

refers to the use of shoots of *Aralia cordata*, called in Japan "udo," as a salad or a vegetable, comparable with celery or asparagus.

A SEMI-POPULAR article on the phylogeny of the various groups of the plant kingdom is contributed by Prof. M. Möbius to *Naturwissenschaftliche Wochenschrift* (June 30 and July 7). To the Flagellatæ is accorded the lowest position, from which arose the algæ, bacteria, diatoms, and other elementary groups. From the green algæ were derived the brown and red seaweeds, the connection of the latter being through Coleochæte or through an Ulva-Bangia link. With regard to the mosses, the author favours the view that they have been derived from an early type of the Jungermanniaceæ, and that the proto-type of the ferns and fern-allies was probably a plant akin to Anthoceros. Finally, the origin of the monocotyledons is traced through the dicotyledons to the conifers, and thence back to the lycopods.

FOUR papers dealing with the identification of new plants chiefly from Mexico are published in the Proceedings of the American Academy of Arts and Sciences (July). Mr. J. M. Greenman is responsible for new species of the liliaceous genus *Schoenocaulon*; among the diagnoses prepared by Mr. M. L. Fernald are a group of *Salvias*. The collections brought by Mr. C. C. Deam from Guatemala and Mexico yielded, amongst others, *Streptochoeta sodoriana*, a grass already known from Ecuador, and a curious *Euphorbia*. The majority of the identifications by Mr. B. L. Robinson are additions to the Compositæ, and include two new genera, *Cymophora* and *Loxothysanus*, also a series of species of *Eupatorium*.

In the account of the grasses of British Somaliland contributed to the *Kew Bulletin* (No. 6), Dr. O. Stapf establishes half a dozen new species, including the economically important "durr" grass, *Andropogon cyrtocladus*, and *Sporobolus fruticosus*, another shrubby species. These shed their leaves and young shoots in the dry season, but produce large, feathery branches after the rains set in. The culms of *Panicum turgidum* and *Pennisetum dichotomum* are persistent, and form a tough fodder suited to the hard-mouthed camel. Phytogeographically the grasses of Somaliland have affinities with the grasses of Eritræa, eastern Nubia, and tropical Arabia. A considerable number of new fungi are recorded by Mr. Massee as additions to the wild fauna and flora of the gardens; a *Hypholoma* and several parasitic *Melanconiaceæ* and *Hyphyomycetæ* provide the types of new species. Mr. Botting Helmsley has a note on a new species of *Rhododendron* from China described by Mr. E. H. Wilson.

THE Annual Report and Transactions of the Manchester Microscopical Society for the year 1906 has just reached us. The society is, we are pleased to see, in a satisfactory condition. The volume before us contains the address delivered in January last by the president, Prof. S. J. Hickson, F.R.S., on "The Differentiation of Species of *Cœlenterata* in the Shallow Water Seas," and many papers of interest to students of microscopical science.

As a member of the International Congress of Geologists meeting in Mexico in 1906, Prof. H. F. Cleland, of Williams College, took the opportunity of visiting, in the company of trained observers of the Mexican Geological Survey conversant with the regions investigated, several of the Mexican volcanoes, and describes in the August number of the *Popular Science Monthly*, under the title

of "Some Little-known Mexican Volcanoes," the volcanoes known as the Volcano Colima and the Nevado de Toluca, and the cinder cones of Valle de Santiago. The article is well illustrated.

PROF. KARL PEARSON'S Robert Boyle lecture, entitled "The Scope and Importance to the State of the Science of National Eugenics," delivered at Oxford on May 17 last, has now been issued by Mr. H. Frowde at one shilling net.

OUR ASTRONOMICAL COLUMN.

HELIUM ABSORPTION IN THE SOLAR SPECTRUM.—In a letter to the *Observatory* (No. 386, p. 315, August) Mr. Nagaraja, of the Kodaikanal Observatory, records the results of some further observations of the helium line, D_3 , as a dark line in the spectrum of the sun. Having already frequently observed this dark line in the regions of the photosphere adjacent to sun-spots, he suspected that he had also seen it as a faint line in the ordinary solar spectrum, but for several reasons found the observation difficult to confirm. He now states that, with a recently mounted large grating spectrograph, he obtained a photograph of the D_3 region on April 19, and on examination found that it shows both the darkening and the chromospheric (bright) line, where a spot was close to the limb, and, further, both the dark and the bright lines appear to be a continuation of a faint line in the normal solar spectrum. Further examination is necessary ere the identity of this faint line with the helium line can be definitely affirmed, and to this end Mr. Nagaraja proposes to carry on the research.

In the same journal Mr. A. A. Buss discusses at some length the appearance of dark and bright helium in various solar regions.

POSSIBLE CHANGES IN THE "OWL" NEBULA (M. 97).—In a paper communicated to the Royal Astronomical Society, Prof. Barnard compares the results of his recent observations of the "Owl" nebula, made with the 40-inch refractor of the Yerkes Observatory, with those made with Lord Rosse's large reflector in 1848. The latter were embodied in the well-known drawing of this object which shows a small star placed in each of the two holes, or "eyes," seen in the nebula, each star representing the pupil of the "eye" in which it was placed.

But according to Prof. Barnard's observations in recent years these stars are clear of the dark openings, and are seen on the nebulosity itself, although quite near to the dark spaces. It follows, then, that either the older drawing, which is corroborated by the observer's notes, did not correctly represent the relative positions of the stars, or that a change has occurred in the nebula, for the two stars have not changed their places in the sky. As a working hypothesis, Prof. Barnard suggests the possibility of the nebula having rotated from west to east on an axis having the position angle of 50° , and states that, if the velocity of rotation were great enough, the two stars in question would have occupied the positions in the holes as shown on Lord Rosse's drawing (*Monthly Notices R.A.S.*, vol. lxvii., No. 8, p. 543, June).

A QUICKLY CHANGING VARIABLE STAR.—According to the results of observations made at the Yerkes Observatory by Mr. Naozo Ichinohe, the variable star 87.1906 Draconis has the very short period of only 10h. 37m. 35s. The light increases from minimum (mag. 11.6) to maximum (mag. 10.9) in about three hours, decreases to minimum in about five hours, and remains at minimum for the remainder of the period.

An ephemeris accompanies Mr. Ichinohe's note in No. 4194 of the *Astronomische Nachrichten* (p. 293, August 2), and the position of this object, for 1906, is given as 16h. 33m. 43.3s. + $58^\circ 2' 36''$.

VENUS AS A LUMINOUS RING.—A brief note by Messrs. H. N. Russell and Z. Daniel, published in No. 1, vol. xxvi., of the *Astrophysical Journal* (p. 69, July), describes an observation of the ring-phase of Venus made at Prince-

ton Observatory, with the 5-inch finder, at 5h. 7m. (G.M.T.) on November 29, 1906.

At that time Venus was about $1^{\circ} 49'$ from the sun's centre, and in moments of atmospheric steadiness the complete outline of the planet's disc was seen distinctly. The space within the circle always appeared a shade darker than that without, but this was probably a subjective effect. A bright spot was several times suspected in the bright part of the ring. If the atmospheric conditions are very favourable, the ring-phase of this planet may be seen again in 1914; after that there will be no further opportunity until 1972.

OBSERVATIONS OF JUPITER, 1906-7.—During the opposition of 1906-7, the Rev. T. E. R. Phillips observed Jupiter on 106 occasions, and records the results of his observations in a paper communicated to the Royal Astronomical Society (Monthly Notices, vol. lxvii., p. 522, June).

The most remarkable change, as compared with the previous opposition, was observed in the great development of the N. equatorial belt, which had become broader and darker, and, in August, was marked with numerous white rifts and dark reddish streaks along its S. edge.

Later in the apparition this belt was seen to be triple, the S. component being the darkest of the three. Changes of colour were also observed in this belt and on the whole of the disc lying between the N.N. temperate belt and the N. pole. Observations of the dark matter in the great S. tropical disturbance tend to confirm, in principle, Major Molesworth's hypothesis concerning the sudden transference of the dark matter from the following to the preceding end of the red spot; for this transference took place in about two weeks instead of taking nearly three months as it should do under normal conditions of transit.

AUGUST METEORS, 1907.

ENCOURAGED by the appearance of several bright Perseids on the nights of August 4 and 6 to expect a somewhat plentiful return of this shower, a careful watch was maintained of the sky on August 10, 11, and 12, but the results scarcely realised expectation. The display was by no means an abundant one, and the individual meteors were not so bright generally as in ordinary years.

The results of watches were as under:—

August 10.

10h. to 12h., twenty-five meteors per hour, of which half were Perseids; 13h. to 14h., forty-five meteors, of which two-thirds were Perseids; 14h. to 15h., twenty-five meteors seen, but there were many passing clouds from west. Two other observers at Bristol counted thirty-one meteors between 11h. and 12h.

August 11.

9h. to 10h., fifteen meteors; about half of them were Perseids; 13h. to 14h., thirty-six meteors, of which twenty-two were Perseids. Sky rather misty. The shower was regarded as very poor for August 11.

Miss Irene Warner, of Horfield Common, Bristol, obtained the following results:—

9h. 25m. to 10h. 5m., eleven meteors, including eight Perseids; 10h. 5m. to 11h. 5m., thirty-three meteors, including twenty-seven Perseids; 11h. 5m. to 11h. 40m., twelve Perseids.

The hourly number was about twenty-eight meteors, of which about twenty-four were Perseids.

Two other observers at Bristol, watching from 9h. to 11h., counted thirty-five meteors.

August 12.

Miss Warner watched as follows:—

9h. 15m. to 9h. 40m., five meteors; 10h. 10m. to 11h. 20m., twenty-one meteors; 11h. 20m. to 12h. 20m., twenty-three meteors. Fine meteor seen at 10h. 55m. with train. The path was from δ to α Cygni. At 11h. 20m. one as bright as Venus from about 35° to 58° to 60° to 47° .

11h. to 12h., about forty-five meteors, including thirty-three Perseids; 13h. to 14h., about fifty meteors, including thirty-five Perseids.

There were many passing clouds, rendering observation difficult, and the hourly numbers were derived from the number of objects seen during clear intervals.

Radiant point on August 10 = $44^{\circ} + 56^{\circ}$.

Radiant point on August 12 = $47^{\circ} + 57^{\circ}$.

A brilliant flash was noticed on August 11, 13h. 17m., probably given by a large Perseid falling in the southern sky, but this quarter was hidden from the observer by a building.

I would be glad to hear of any duplicate observations of the following objects seen on August 10:—

h. m.					
(1)	10 22	...	$1\frac{1}{2}$...	$339 + 66$ to $306 + 57\frac{1}{2}$
(2)	10 30	...	1	...	$5 + 26$,, $8 + 22\frac{1}{2}$
(3)	11 6	...	$1\frac{1}{2}$...	$2\frac{1}{2} + 65$,, $54 + 73$

No. 2 was a fine, bluish-white Cygnid, which flashed out suddenly in a short diving course. No. 3 was from the direction of the λ Aquilid radiant, and it moved very slowly, occupying $3\frac{1}{2}$ seconds in sailing along its path of 19° . The nucleus was yellow, and it threw off a trail of reddish sparks.

Other showers were seen on August 10-12 from $332^{\circ} + 50^{\circ}$ and $333^{\circ} + 28^{\circ}$.

W. F. DENNING.

TREASURY GRANTS TO UNIVERSITY COLLEGES.

THE report of the permanent advisory committee appointed on January 31, 1906, to advise the Treasury as to the distribution of the grant in aid of colleges furnishing education of a university standard has now been published.¹ The report states that a study of the problem how education of a university standard may be most advantageously assisted by State grants shows that there is at the present time considerable complexity surrounding the question, not only by reason of the overlapping due to various educational bodies carrying on similar work in the same areas, but also by reason of public money derived from rate or tax being voted for higher education by different authorities with insufficient information as to one another's operations. For these reasons the committee has obtained permission to shorten from five years to two the period for which the present re-allocation shall hold good. It is hoped that it will be possible by April 1, 1909, to make recommendations for a permanent arrangement.

With regard to the question of standard, the committee finds that it is only in comparatively few of the university colleges that the majority even of the day students have passed a matriculation examination or equivalent test. A well-recognised standard once established would make it easier for the colleges to coordinate their curricula with those of secondary schools. For the present, the report continues, a step may be taken in this direction by excluding rigorously from the category of university work all classes which are preparing students for matriculation.

The committee appointed two inspectors to visit the colleges which already receive grants and certain other institutions which had applied for recognition. Sir Thomas Raleigh, K.C.S.I., and Dr. Alex. Hill undertook this task, and their reports on the various institutions visited are printed as an appendix to the report.

After summarising the financial assistance received by the colleges from Imperial funds and recapitulating the rules laid down for its guidance in various Treasury minutes, the committee recommended that a new maximum limit for all grants be set up, and 10,000l. has been decided upon. This maximum relates only to the annual grants for general purposes, and is exclusive of grants for special purposes which may be made from time to time.

The grants recommended for the intervening period of two years, pending a settlement of the general questions referred to in the report, are shown in the following table:—

¹ "University Colleges (Great Britain)." Grant in Aid. [267]. Price 1s. 6d.